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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/807,017

03/23/2004

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115-001US

4800

22897 7590 01/09/2008

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EXAMINER

MUSSELMAN, TIMOTHY A

ART UNIT

PAPER NUMBER

3714

MAIL DATE

DELIVERY MODE

01/09/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/807,017

Applicant(s)

FEYGIN ET AL.

Examiner

Timothy Musselman

Art Unit

3714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Status of Claims***

In response to the communication of 10/29/2007, claims 1-34 are pending in this application. Claims 35-38 have been cancelled.

### ***Allowable subject matter***

The indicated allowability of claims 2-3, 7, 9, 10-14, 20, 28-29, and 32-33 in the previous office action is withdrawn in light of the newfound references to Kreitenburg (US 4,380,439) and Cunningham (US 7,202,851). The office regrets the delay in the discovery of these references.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of the relevant portion of 35 U.S.C. 103 that forms the basis for the rejections made in this section of the office action;

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

**Claims 1, 3-17, 21-23, 26-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreitenburg (US 4,380,439) in view of Cunningham et al. (US 7,202,851).**

**Regarding claims 1, 4, 12, 14, 21-22, and 27,** Kreitenburg discloses a palpation training module comprising a pseudo vein disposed beneath a pseudo skin through an opening in a housing structure. See col. 2: 11-20 and fig. 3. Note that the natural opposing force to the applied pressure is constant and it opposes the downward motion of the user (opposite and equal, since the user presumably does not push the entire device into motion). There is no teaching in Kreitenburg wherein the generated force is magnetic. However, Cunningham discloses a palpation module for vascular access (among other uses) that discloses wherein the generated force can be magnetic in nature. See col. 10: 1-5 and also col. 18: 18-28. It would have been obvious to one of ordinary skill in the art at the time of the invention to include magnetic feedback in the system of Kreitenburg, because the use of magnetically controlled haptic feedback is representative of the current state of the art in haptic interface simulations.

**Regarding claims 3, 6-7, 17, 28, and 30,** Kreitenburg discloses all of the features described above with respect to claim 1, and further discloses wherein the stiffness (rigidity) of the vein is adjusted by the infusion of fluid. See col. 2: 20-28.

**Regarding claims 5,** Kreitenburg does not teach wherein the vein yields to applied pressure. However, Cunningham teaches of the concept of palpation target models yielding to applied pressure. See col. 39: 60 - col. 40: 29. It would have been obvious to one of ordinary skill in the art at the time of the invention to include this interaction in the system of Kreitenburg, because the interactive haptic feedback is representative of the current state of the art in haptic interface devices (as taught by Cunningham).

**Regarding claims 8, 23, and 34,** Kreitenburg further discloses wherein the pseudo vein can be felt, but is not visually discernable beneath the skin. See col. 2: 12-28.

**Regarding claims 9-11, 13, and 31,** Kreitenburg fails to teach wherein the pseudo vein can be felt or not felt as desired, dependant upon applied pressure. However, Cunningham teaches of this identical

concept with regard to palpation simulations. See col. 39: 60 - col. 40: 29. It would have been obvious to one of ordinary skill in the art at the time of the invention to include this interaction in the system of Kreitenburg, because such interactive haptic feedback is representative of the current state of the art in haptic interface devices (as taught by Cunningham). Note that the feeling or not of the organ would be a variable counter pressure as per claim 13 that is constant during application.

**Regarding claim 15**, the counter force described above with respect to claim 12 would be slightly greater than the force of gravity at a minimum magnitude, because the vein stays in place (i.e. does not climb or fall on it's own).

**Regarding claim 16 and 29**, Kreitenburg fails to teach of magnetic fields being generated by a coil and a permanent magnet. However, Cunningham discloses this in col. 18: 18-28, and its use would have been obvious for the identical reasons set forth with respect to claim 12 above.

**Regarding claim 26**, Kreitenburg fails to teach of an electronics/communication interface attached to the palpation module coupling the module to a data processing system. However, Cunningham discloses this feature in col. 4: 5-29. It would have been obvious to one of ordinary skill in the art at the time of the invention to include this data interfacing in the system of Kreitenburg, because the interactive haptic devices are representative of the current state of the art in haptic interface devices (as taught by Cunningham).

**Regarding claims 32 and 33**, Kreitenburg fails to teach of measuring the position of the vein by disposing the vein on a movable first plate, and measuring the distance between said first plate and a second plate as the vein (and hence the first plate) is moved. However, this measurement concept is disclosed by Cunningham in col. 19: 1-17, and the application to the vein in Kreitenberg would have been obvious to one of ordinary skill in the art at the time of the invention because the interactive haptic

devices and the measurement techniques as taught by Cunningham are representative of the current state of the art in haptic interface devices.

**Claims 2 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreitenburg (US 4,380,439) in view of Leight et al. (US 6,575,757).**

**Regarding claims 2 and 20**, Kreitenburg discloses a palpation module as described above, but fails to teach wherein the module measures a change in position of said pseudo vein. However, the measuring of position pertaining to simulated anatomical items within palpation modules is old and well known in the art. For example, Leight discloses this concept in a medical palpation module. See col. 5: 1-5. It would have been obvious to one of ordinary skill in the art at the time of the invention to include this position change measurement concept with regard to applied pressure in the system of Kreitenburg, in order to expand the system to allow for feedback.

**Claims 18-19 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreitenburg (US 4,380,439) in view of Cunningham et al. (US 7,202,851) and in further view of Cunningham et al. (US 6,470,302).**

**Regarding claims 18 – 19 and 24**, Kreitenburg/Cunningham '851 disclose wherein the vein yields to downward pressure as described above with regard to claim 5. However there is no teaching wherein this indicates that an occlusion procedure has been performed. However, Cunningham '302 discloses a vascular access simulation in which measurable pressure on a skin stretch module indicates an occlusion procedure. See col. 11: 33-54. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the interaction features representative of the current state of the art as taught by both Cunningham references in the system of Kreitenburg, because it would merely be the updating of kreitenburg to the current state of the art.

Regarding claim 25, Kreitenberg/Cunningham '851 fail to teach of a catheter/needle module for insertion into the device. This, however, is a feature of the Cunningham '302 reference. See col. 7: 21-35. This combination would have been obvious to one of ordinary skill in the art. Since the Cunningham '302 reference comprises both the catheter module and a palpation module (as described above with reference to claim 24), such an addition to Kreitenberg/Cunningham '851 would have been a combination already known to exist in the art.

### ***Response to Arguments***

Applicant's arguments dated 10/29/2007 have been fully considered, but are moot in view of the new grounds of rejection. This action is made non-final.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy Musselman whose telephone number is (571)272-1814. The examiner can normally be reached on Mon-Thu 6:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pezzuto can be reached on (571)272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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